

THE COLOR PHASES OF *THINOPINUS PICTUS*
LECONTE (COLEOPTERA: STAPHYLINIDAE)

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ABSTRACT

Thinopinus pictus LeConte ranges from Baja California to southern Alaska. It is polytopic in the northern half of its range. *T. variegatus* Motschulsky is a synonym, not a subspecies.

The large seashore insect, the pictured rove beetle *Thinopinus pictus* LeConte, was considered by Leng (1920) as having 2 subspecies: The typical pale adult form described by LeConte from San Diego, California (1852) and a northern subspecies *T. pictus variegatus* Motschulsky (1853), with dark adults, described from "Littoral occidental de l'Amerique". Motschulsky's material all came from Russian America, i.e., north of San Francisco. Essig (1926) wrote of it, "It ranges along the Pacific Coast from Lower California as far north as Central California. On the white sand near Monterey, E. C. Van Dyke reports a very pale form, while the darker form *variegatus* (Mots.) ranges from Central California to Southern Alaska."

Until recently all adult specimens seen by me from north of Monterey County, California were definitely darker than those seen from Monterey County and south. I assumed that 2 subspecies were involved. Moore and Legner (1976), in a chart giving distribution of some Pacific Coast seashore Coleoptera, treated them as distinct subspecies. However, with respect to collecting adults on various beaches in Oregon, Malkin (1958) stated, "The interesting feature of this was the fact that every specimen belonged to the relatively scarce melanistic form in which dark body color is very dominant over the usual, yellow, pale color. The beach here is made up of black and dark volcanic sand. On the other hand, the pale, yellow form lives on light colored white or yellow beaches and what is interesting here is the very rigid restriction of each form to the appropriate type of beach background." I thought that these 2 color forms to which Malkin referred were varieties of the dark northern subspecies.

Recently, with assistance by Loren Russell, I have been able to borrow from Dr. John D. Lattin, Oregon State University, Corvallis, a series of 67 specimens of the pale form from Oregon. These were taken in May, June, and July at Charleston, Oregon. They differ in no discernible way from the pale forms from southern California and Baja California. Therefore, *Thinopinus pictus* LeConte 1852 = *T. variegatus* Motschulsky 1853, **new synonymy**.

Dark forms seen by me come from Rockaway Beach, San Mateo County, California; Dillon Beach, Sonoma County, California; Bainbridge Island, Kitsat County, Washington; and near Neah Bay, Callum County, Washington. Malkin mentions taking the dark form at Mountain State Beach,

Curry County, Oregon and lists a number of Oregon beaches which support the pale form. These northern records of the pale form with records of the melanistic form to the south of them definitely establish that no geographic subspeciation exists. Only one species is involved, it being polytopic in the northern part of its range.

This polytopic distribution is, no doubt, induced by the color of the sand on which the insects live. This species is wingless. Craig (1970) gave an account of its habits. Its wingless condition must greatly impede dispersal and consequently limit gene flow along the coast so that selection by predators causes the population of each individual beach to closely resemble the color of the sand on which it lives. Leech and Moore (1971) discussed flights of *Cafius* and related beetles at the seashore and hinted that such flights were probably of a dispersal nature. Such strong fliers as *Cafius* show no color adaptations to individual beaches. This further strengthens the conception that the color phases of *Thinopinus pictus* are due to its flightless condition and consequent selection for color to match the environment.

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